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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/692,588	10/24/2003	Chun-An Chen	JCLA10198	9479
23900	7590	01/26/2005	EXAMINER	
J C PATENTS, INC.			BUEKER, RICHARD R	
4 VENTURE, SUITE 250			ART UNIT	
IRVINE, CA 92618			PAPER NUMBER	

1763

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/692,588	Applicant(s) #2 CHEN	
	Examiner Richard Bueker	Art Unit 1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 1, the phrase “defining a circular trace by the center of the substrate” is unclear, vague and apparently non-idiomatic. According to the description in applicants’ specification the “circular trace” is defined by the rotation of the entire substrate, and it is not clear why claim 1 describes the “circular trace” as being defined by the center of the substrate. Also, the phrase “defining a circular trace by the center of the substrate” should be replaced by “defining a circle by the rotation of a point on the substrate”. Similar language should be used in claim 7. In claim 1, the phrase “for paralleling” in the phrase “for paralleling the supplying direction and a tangential direction” is non-idiomatic, vague and indefinite. Also, the use of the word “for” in “for paralleling” is unclear because it could be interpreted as an intention or intended future action rather than as a required step of the process. The term “for paralleling” can be interpreted as meaning that the supplying direction and a tangential direction are in parallel planes, for example. Also, the phrase “a tangential direction of the point of the circular trace” in claim 1 and the phrase “a tangential direction of the circular trace” in claim 7 are vague and indefinite because they depend on the meaning of “a circular trace” which is not well defined in either of claims 1 or 7. These limitations should be replaced by a limitation that requires the supplying direction to be parallel to a line that is a tangent to a point on a circle, wherein the circle is traced out by a point on the substrate as the substrate rotates, and wherein the tangent point is directly above the heater such that a vertical line passes through the point and the heater. In claim 8,

the phrase "the evaporation region" lacks proper antecedent basis and should be changed to "an evaporation region".

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4-7 and 11-13 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hatwar (6,676,990) (Fig. 3) who discloses an OLED deposition process and apparatus which includes a rotator for fixing the center of a substrate and rotating the substrate to define a circular trace, a heater disposed under a point of the circular trace, and a source supplying device over the heater. Regarding the claim 1 limitation of "for paralleling the supplying direction and a tangential direction", it is noted that this limitation reads on providing the supplying direction in a plane that is parallel to a line that is a tangent to a point. Regarding claim 7, it is noted that this claim does not relate the tangential direction to any particular point. Therefore, regardless of what feeding direction is used in Hatwar's

apparatus, there will always be some point on his rotating substrate for which a tangent line will be parallel to the feeding direction. Also, while both of claims 1 and 7 describe the heater as “under a point of the circular trace”, it is noted that “under” is defined as “below” or “lower than” and does not require that the heater be located in a position at which a vertical line will pass through both the point and the heater. The heater of Hatwar is under all of the points on the circular trace of Hatwar, and therefore, regardless of what feeding direction is used in Hatwar’s apparatus, there will always be some point on his rotating substrate for which a tangent line will be parallel to the feeding direction.

Claims 2, 3 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatwar taken in view of Yamazaki (2003/0010288) who teaches (Fig. 2A) the use of a wall shield which is a “shelter” as claimed by applicants, and it would have been obvious to one skilled in the art to provide the apparatus of Hatwar with a wall shield for the desirable purpose of shielding the wall from undesired deposition on the wall.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hatwar taken in view of Clark (6,475,287) who discloses an OLED deposition process as in Hatwar, and Clark also discloses the use of a rectangular evaporation boat. It would have been prima facie obvious to use a rectangular boat in the process and apparatus of Hatwar, because Clark teaches that a rectangular shape can successfully be used to deposit an OLED layer by vacuum evaporation.

Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Connell (4,310,614) or Bergfelt (4,222,345) taken in view of Phinney (4,791,261),

Hatwar (6,676,990) Dobson (3,797,452) and/or Nozaki (JP 59-133366). Connell (Figs. 1-6) and Bergfelt (Figs. 1-3) both disclose an evaporation apparatus comprising a rotator for rotating a substrate and a heated vacuum evaporation crucible below the substrate. Bergfelt and Connell also teach the use of a "shelter" with a circular opening between the crucible and the substrate. They do not discuss how they supply their crucibles with evaporation source material. Phinney (Fig. 1), Hatwar (Fig. 3), Dobson (Fig. 5) and Nozaki (Figs. 1-3) all teach that an evaporation crucible can be supplied with a source material by using a source supplying device to feed a source material in the form of a wire to the crucible. The wire is fed from a direction. It would have been obvious to one skilled in the art to feed the crucible of Connell or Bergfelt by using a conventional source-supplying device of the type taught by Phinney, Hatwar, Dobson and/or Nozaki because the secondary references teach that their source supplying devices can successfully keep a crucible supplied with source material. Applicants' claims as presently written do not make clear the relationship between the source supplying direction and the recited tangential direction. Therefore, any source supplying direction that was used in the apparatus of Connell or Bergfelt would meet the limitations of claims 1-14 as presently written.

Claims 1, 4-7 and 11-14 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Tochishita (6,280,792). Tochishita (Figs. 8 and 9) discloses an evaporation apparatus comprising a rotator that rotates the substrate, wherein the rotating substrate defines a "circular trace". Fig. 8 illustrates an aluminum wire 45 that is the "evaporation source", which is fed to the

heater (boat 42) by feeding mechanism 47 that is a "source supplying device". It can be seen from Fig. 8 that a tangent line can be drawn to a point on the "circular trace" of a rotating substrate held by the rotating carrier such that the wire feeding direction of feeder 47 would be parallel to such a tangent line. Regarding the claim 1 limitation of "fixing the center of the substrate" and the claim 7 limitation of "a rotator fixing the center of the substrate", it is noted that "fixing" means "to place securely" or "to make ready or prepare" or "attach", and the center of Tochishita's substrates are placed securely, made ready and attached to the rotator. It is noted also that if a substrate is fixed to a rotor, then the center of the substrate would also inherently be fixed.

Claims 1-8 and 11-14 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Vignola (5,622,564) (Figs. 1-6) who discloses an evaporation apparatus comprising a rotator (Fig. 5) that rotates the substrate, wherein the rotating substrate defines a "circular trace". Fig. 3 illustrates an aluminum wire 40 that is the "evaporation source", which is fed to the heater (boat 44) by feeding mechanism 42 that is a "source supplying device". It can be seen from Fig. 3 that a tangent line can be drawn to a point on the "circular trace" of a rotating substrate held by the rotating carrier 76, such that the wire feeding direction of feeder 42 would be parallel to such a tangent line. The housing 32 and the walls of passage 34 form a "shelter located between the source supplying device and the substrate that define an evaporation region with a radius which is "substantially similar" to that of the "circular trace". Regarding the claim 1 limitation of "fixing the center of the substrate" and the claim 7 limitation of "a rotator fixing the center of the substrate", it is noted that "fixing"

means “to place securely” or “to make ready or prepare” or “attach”, and the center of Vignola’s substrates are placed securely, made ready and attached to the rotator. It is noted also that if a substrate is fixed to a rotor, then the center of the substrate would also inherently be fixed.

Claims 1-14 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Carpenter (3,750,623) (Figs. 6-8), who discloses an evaporation apparatus comprising a rotator (132 of Fig. 6) that rotates the substrate, wherein the rotating substrate defines a “circular trace”. Fig. 6 illustrates an aluminum wire 144 that is the “evaporation source”, which is fed to the heater (boat 142) by feeding mechanism that is a “source supplying device”. It can be seen from Fig. 6 that a tangent line can be drawn to a point on the “circular trace” of a rotating substrate held by the rotating carrier, such that the wire feeding direction of the feeder would be parallel to such a tangent line. The drum 132 as seen in Figs. 6-8 forms a “shelter” located between the source supplying device and the substrate that define an evaporation region with a radius which is “substantially similar” to that of the “circular trace”. The open end of the drum 132 is a circular opening as recited in claim 11.

Regarding the claim 1 limitation of “fixing the center of the substrate” and the claim 7 limitation of “a rotator fixing the center of the substrate”, it is noted that “fixing” means “to place securely” or “to make ready or prepare” or “attach”, and the center of Carpenter’s substrates are placed securely, made ready and attached to the rotator. It is noted also that if a substrate is fixed to a rotor, then the center of the substrate would also inherently be fixed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Bueker whose telephone number is (571) 272-1431. The examiner can normally be reached on 9 AM - 5:30 PM, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on (571) 272-1439. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Richard Bueker
Primary Examiner
Art Unit 1763